

Appendix F
Turbidity Transects Study

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Abbreviations and Acronyms

NTU	nephelometric turbidity unit(s)
SJR	San Joaquin River
SJR DS	San Joaquin River downstream of Newman Wasteway

Appendix F

Turbidity Transects Study

Turbidity transects were carried out at the four locations shown on Figure F-1 on July 30, 2008, July 31, 2008, and August 11, 2008. Transects were carried out by wading across the San Joaquin River (SJR) at each location and manually reading the YSI, Inc., handheld display. Data points were taken approximately every 10 feet across the river. At each point, two readings were taken (one at about 2 feet above the riverbed and one at about 6 inches above the riverbed) if the river was more than 2 feet deep; in shallower spots, only one reading was taken, at about 6 inches above the riverbed.

At all times, turbidity in the Merced River was near 0 nephelometric turbidity units (NTU), so no results are shown. Figures F-2 and F-3 show turbidity at the San Joaquin River downstream of Newman Wasteway (SJR DS) site and the Hills Ferry Bridge site on July 30, 2008. No transect was taken at the trailer park site on this day. Figure F-2 shows a turbidity of about 250 NTU nearly constantly across the river, except in the wake of some large debris that caused flow velocity to slow down enough to allow some sediment to settle out of the water column. Figure F-3 shows the effect of the Merced River on the SJR. The Merced River caused turbidity to drop to near zero where it enters the SJR on the SJR's right bank. Apart from the influence of the Merced River, turbidity at Hills Ferry Bridge site was similar to the turbidity at the SJR DS site. At both sites, little vertical variability in turbidity occurred.

Figures F-4 through F-6 show turbidity at all three sites on July 31, 2008. As on the previous day, the SJR DS site has uniform turbidity of about 230 to 250 NTU, except behind the large debris noted above. The effect of the Merced River entering the SJR can be clearly seen in the results from the Hills Ferry Bridge site (e.g., Figure F-3 and F-5). Farther downstream, at the Trailer Park site, the river was too deep to wade all the way across, so data points were taken only from the left bank to near the midpoint of the river. Near the left bank, turbidity was lower than at the upstream sites and also varied more vertically. The highest turbidity was detected near the center of the river, possibly because the flow was strongest there.

Figures F-7 through F-9 show the turbidity at all three sites on August 11, 2008. Cross-river trends in turbidity were about the same as during the July 30 and July 31, 2008, measurements, but the magnitude of turbidity was much lower on August 11 than it had been earlier, as shown on Figure F-10. This result may indicate that the initial flush of sediments from the Delta-Mendota Canal and Newman Wasteway, which were first released into the SJR on July 30, 2008, may have been flushed downstream by August 11. Figure F-10 shows that average turbidity is highest at the farthest upstream station (SJR DS site) and drops to consecutively lower values downstream at the Hills Ferry Bridge and

Trailer Park sites. This result likely reflects the influence of the low-turbidity Merced River entering the SJR.

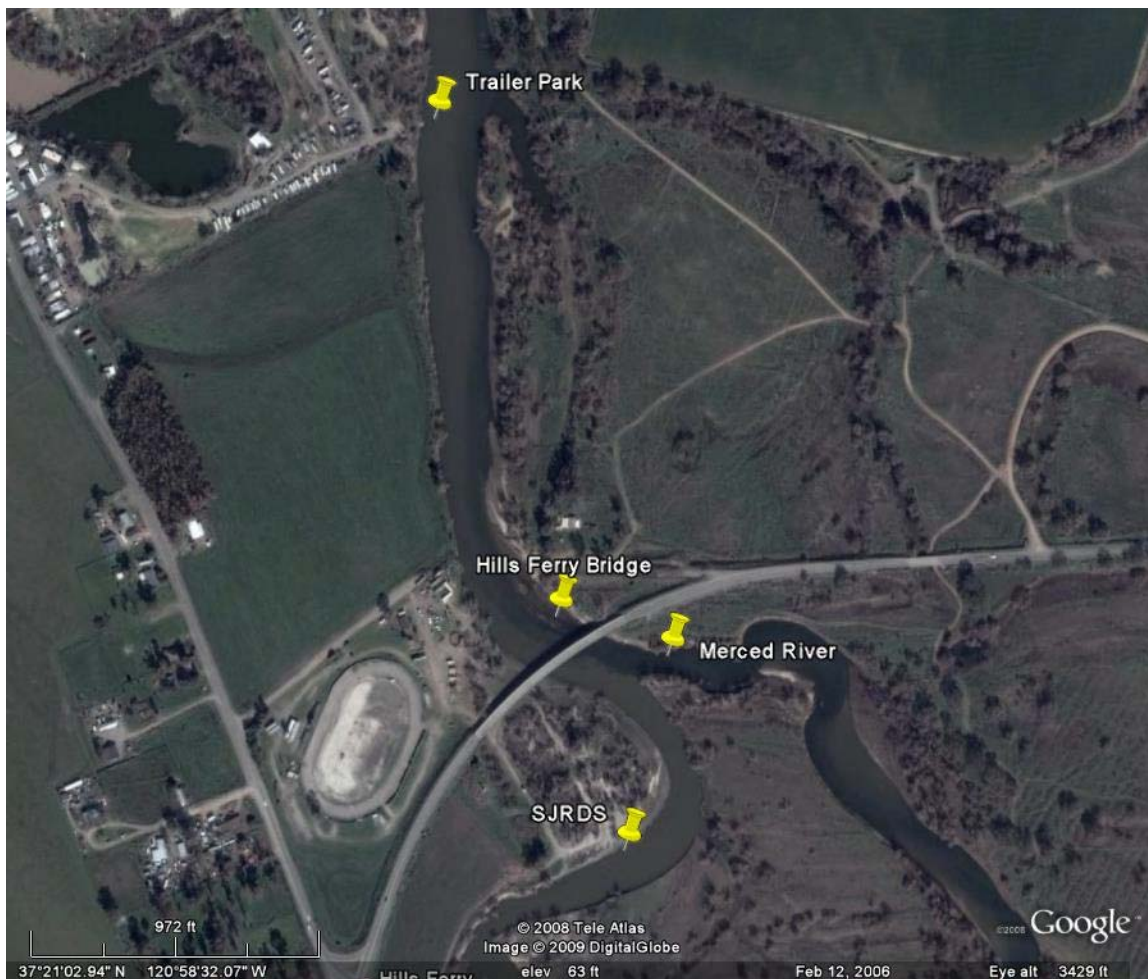


Figure F-1. Locations of Turbidity Transects

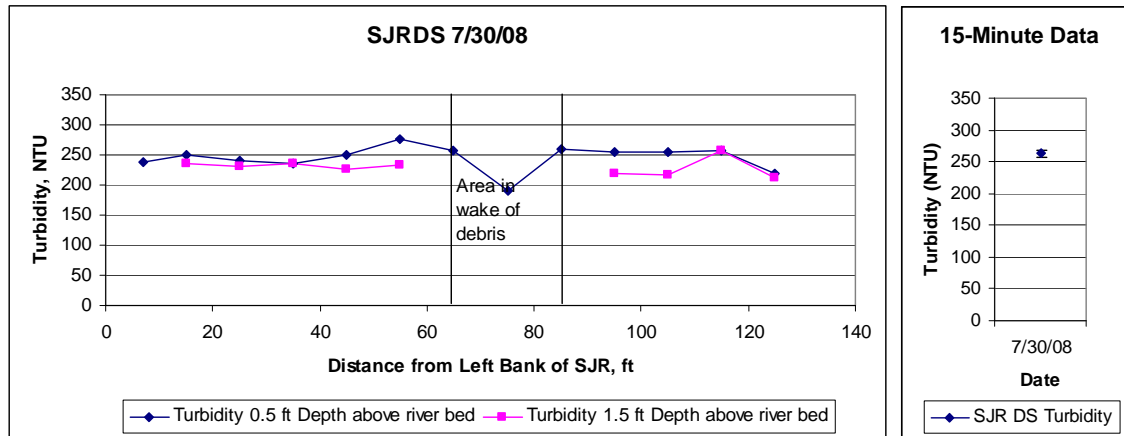


Figure F-2. Turbidity at SJR DS Site on July 30, 2008

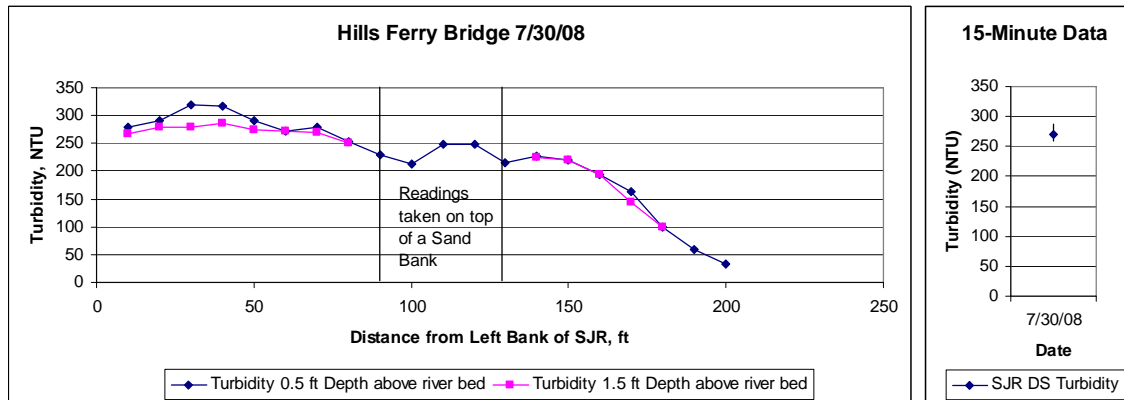


Figure F-3. Turbidity at Hills Ferry Bridge Site on July 30, 2008

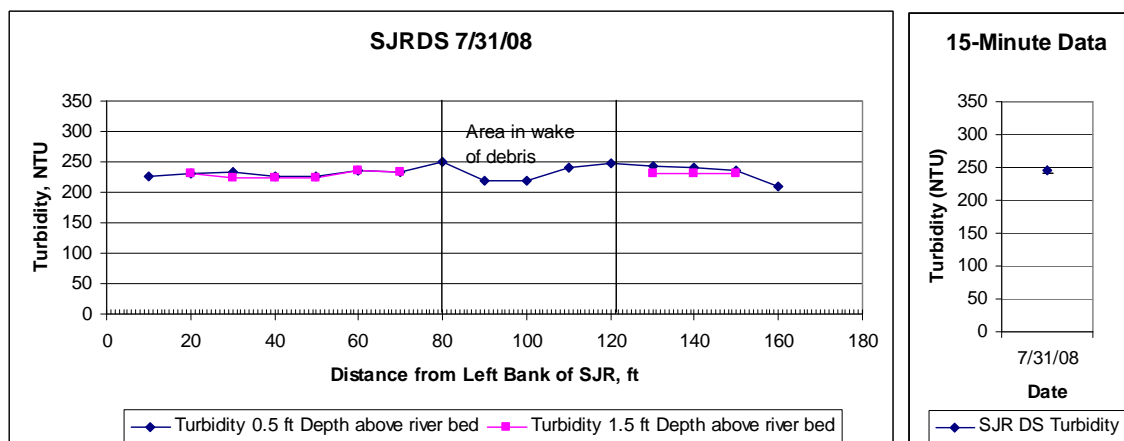


Figure F-4. Turbidity at SJR DS Site on July 31, 2008

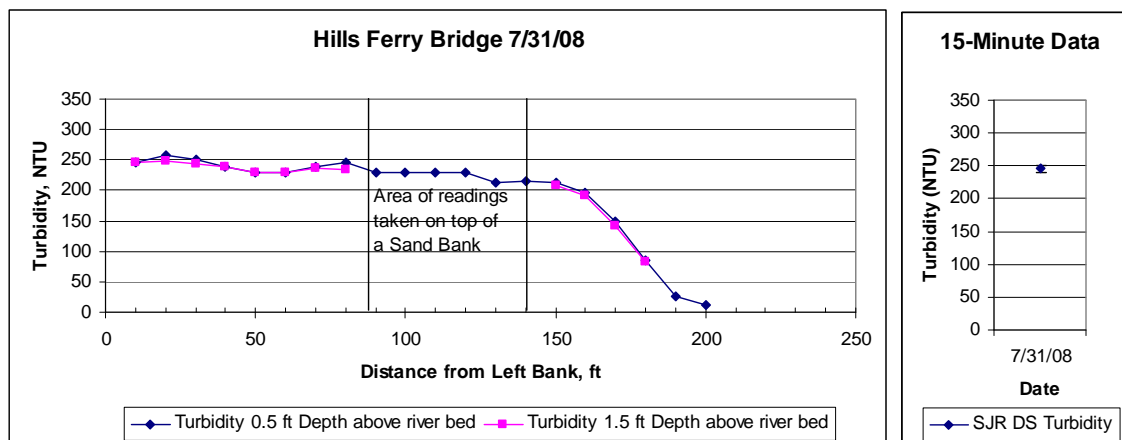


Figure F-5. Turbidity at the Hills Ferry Bridge Site on July 31, 2008

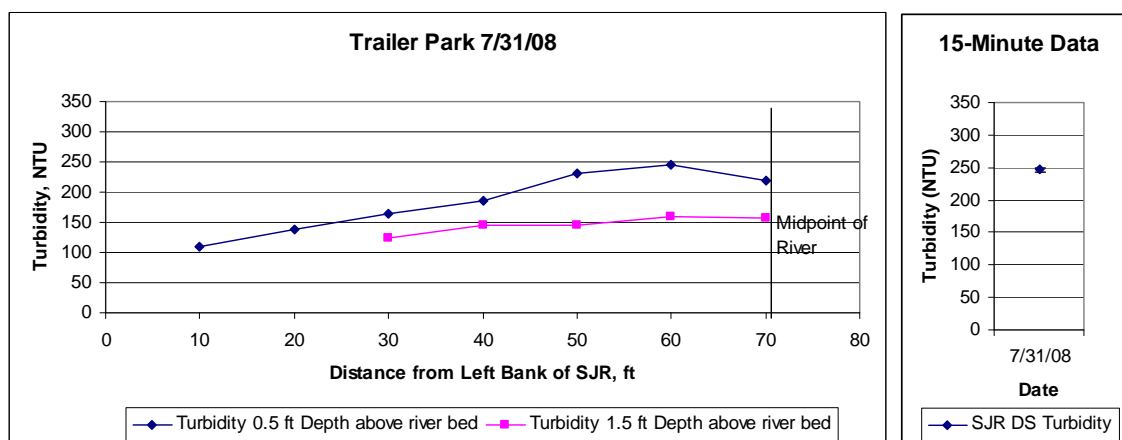


Figure F-6. Turbidity at the Trailer Park Site on July 31, 2008

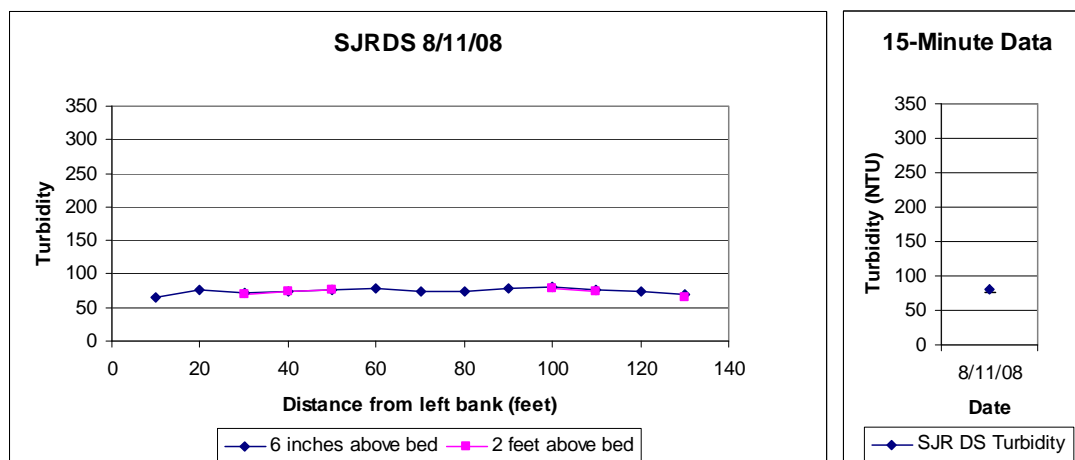


Figure F-7. Turbidity at SJR DS Site on August 11, 2008

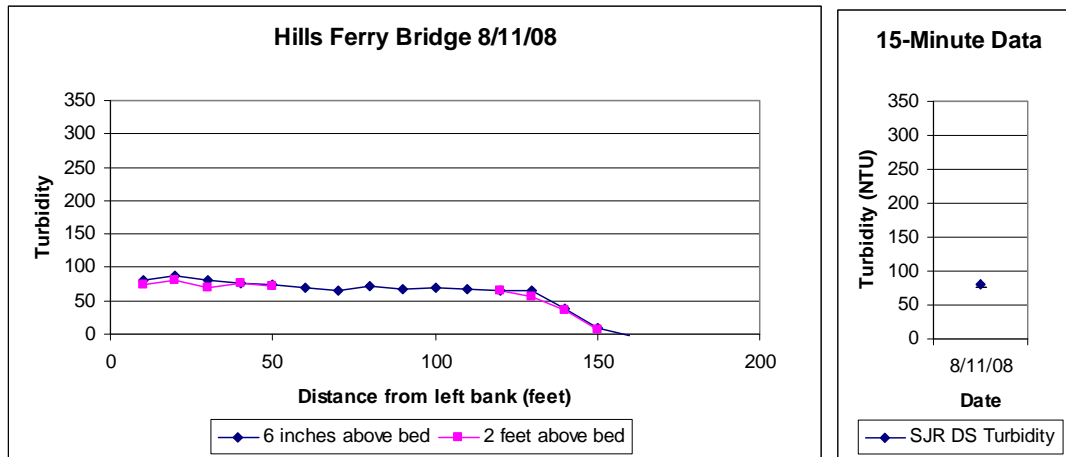


Figure F-8. Turbidity at Hills Ferry Bridge Site on August 11, 2008

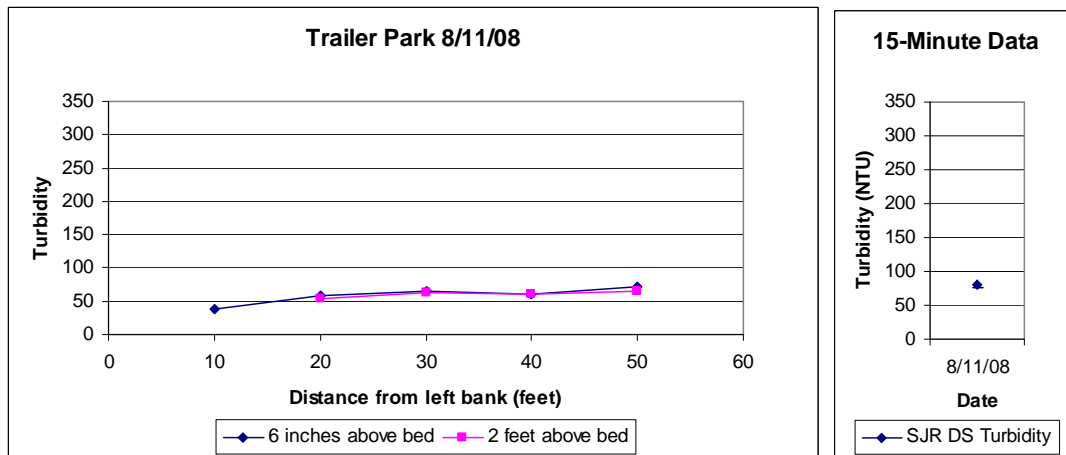
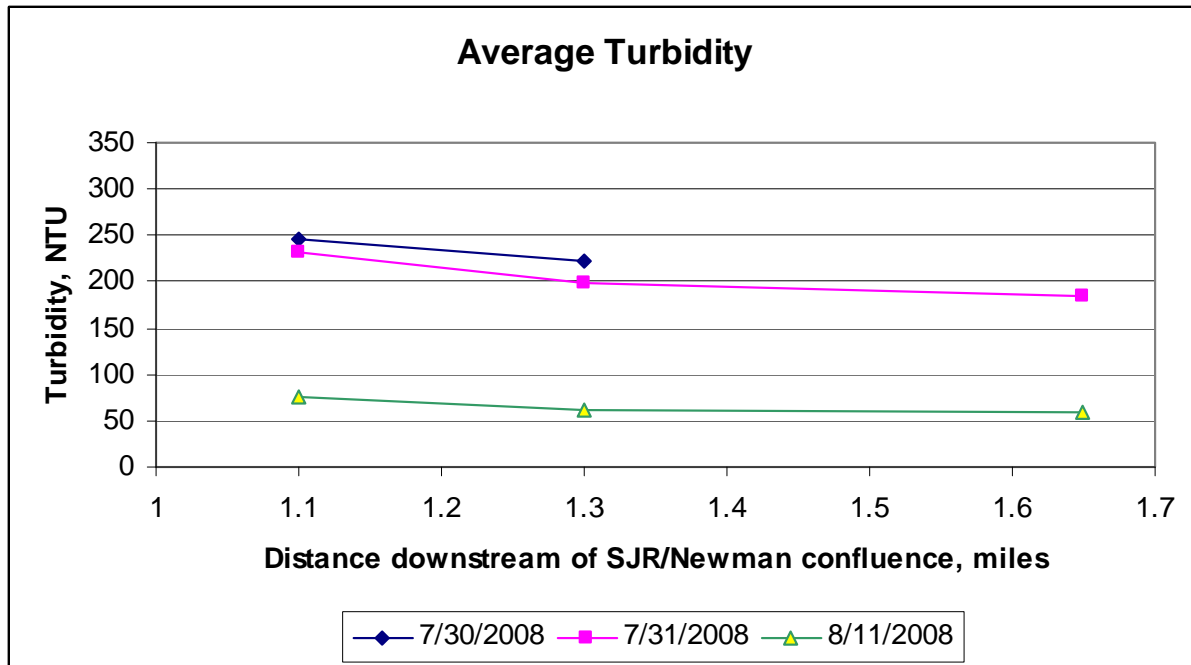


Figure F-9. Turbidity at the Trailer Park Site on August 11, 2008



**Figure F-10. Average Turbidity Versus Distance
Downstream of the SJR/Newman Wasteway Confluence**